

OZTURK et al.
Appl. No. 09/988,225
September 6, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for determining a location of a mobile radio, comprising:
determining location information for plural cells in a set of cells associated with the mobile radio, and
using the cell location information to determine a location of the mobile radio, wherein the cell location information includes information defining one or more boundaries of a coverage area corresponding to each of the cells,
wherein the cell location information includes coordinates of boundary positions for each cell and each boundary position includes a horizontal coordinate and a vertical coordinate,
the method further comprising:
comparing the horizontal coordinates;
selecting one or more of the horizontal coordinates;
comparing the vertical coordinates;
selecting one or more of the vertical coordinates; and
using the selecting horizontal and vertical coordinates to define the mobile radio location.
2. (Original) The method in claim 1, wherein the set of cells includes an active set of cells for the mobile radio.
3. (Original) The method in claim 1, wherein the set of cells includes cells that are cells currently supporting a handover communication with the mobile radio.
4. (Original) The method in claim 3, wherein the set of cells includes cells that are candidates for supporting a communication with the mobile radio.
5. (Cancel)
6. (Cancel)

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7. (Cancel)

8. (Cancel)

9. (Cancel)

10. (Currently Amended) The method in claim 19, wherein a pair of horizontal coordinates and a pair of vertical coordinates are selected to define the mobile radio location.

11. (Currently Amended) The method in claim 19, wherein a first selected horizontal coordinate corresponds to a highest one of the lowest horizontal coordinates of each of the cell boundary coordinates, a second selected horizontal coordinate corresponds to a lowest one of the highest horizontal coordinates of each of the cell boundary coordinates, a first selected vertical coordinate corresponds to a lowest one of the highest vertical coordinates of each of the cell boundary coordinates, and a second selected vertical coordinate corresponds to a highest one of the lowest vertical coordinates of each of the cell boundary coordinates.

12. (Original) A method for determining a location of a mobile radio comprising:
obtaining previously determined coordinates of plural cells in a set of cells associated with the mobile radio, where each coordinate may be defined with a horizontal coordinate and a vertical coordinate;

analyzing a first group of lowest horizontal coordinates for the set of cells and selecting a highest coordinate from the first group;

analyzing a second group of highest horizontal coordinates for the set of cells and selecting a lowest coordinate from the second group;

analyzing a third group of lowest vertical coordinates for the set of cells and selecting a highest coordinate from the third group;

analyzing a fourth group of highest vertical coordinates for the set of cells and selecting a lowest coordinate from the fourth group;

determining a location of the mobile radio using the selected coordinates from some or all of the first, second, third, and fourth groups.

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13. (Original) The method in claim 12, wherein the determining step includes determining a location of the mobile radio using the selected coordinates from each of the first, second, third, and fourth groups.

14. (Original) The method in claim 12, wherein horizontal coordinates represent latitude values and vertical coordinates represent longitude values.

15. (Original) The method in claim 12, wherein the set of cells includes an active set of cells for the mobile radio.

16. (Original) The method in claim 15, wherein the set of cells includes cells that are candidates for the active set.

17. (Original) The method in claim 12, wherein the set of cells includes cells that are currently supporting a handover communication with the mobile radio.

18. (Currently Amended) A node in or coupled to a radio access network for determining a location of a mobile radio comprising electronic circuitry configured to perform the following tasks:

determine a set of cells associated with the mobile radio;

determine cell location information for cells in the set of cells; and

use the cell location information to determine a location of the mobile radio,

wherein the cell location information includes information defining one or more

boundaries of a coverage area corresponding to each of the cells in the set;

wherein the location information includes coordinates of boundary positions for each cell

and wherein each boundary position includes a horizontal coordinate and a vertical coordinate,

wherein the electronic circuitry is further configured to:

compare the horizontal coordinates;

select one or more of the horizontal coordinates;

compare the vertical coordinates;

select one or more of the vertical coordinates; and

use the selected horizontal and vertical coordinates to define the mobile radio location.

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19. (Original) The node in claim 18, wherein the set of cells includes cells that are in an active set for the mobile radio.

20. (Original) The node in claim 18, wherein the set of cells includes cells that are candidates for supporting a communication with the mobile radio.

21. (Original) The node in claim 18, wherein the set of cells includes cells that are currently supporting a handover communication with the mobile radio.

22. (Cancel)

23. (Cancel)

24. (Cancel)

25. (Cancel)

26. (Cancel)

27. (Currently Amended) The node in claim 1826, wherein the electronic circuitry is further configured to select one pair of horizontal coordinates and one pair of vertical coordinates to define the mobile radio location.

28. (Currently Amended) The node in claim 1826, wherein a first selected horizontal coordinate corresponds to a highest one of the lowest horizontal coordinates of the cell boundary coordinates, a second selected horizontal coordinate corresponds to a lowest one of the highest horizontal coordinates of the cell boundary coordinates, a first selected vertical coordinate corresponds to a lowest one of the highest vertical coordinates of the cell boundary coordinates, and a second selected vertical coordinate corresponds to a highest one of the lowest vertical coordinates of the cell boundary coordinates.

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29. (Original) The node in claim 18, wherein the electronic circuitry is further configured to:

obtain coordinates of cells in the set;

analyze a first group of lowest horizontal coordinates for the set of cells and select a highest coordinate from the first group;

analyze a second group of highest horizontal coordinates for the set of cells and select a lowest coordinate from the second group;

analyze a third group of lowest vertical coordinates for the set of cells and select a highest coordinate from the third group;

analyze a fourth group of highest vertical coordinates for the set of cells and select a lowest coordinate from the fourth group;

determine a location of the mobile radio using the selected coordinates from some of the first, second, third, and fourth groups.

30. (Original) The node in claim 29, wherein the electronic circuitry is further configured to determine a location of the mobile radio using the selected coordinates from each of the first, second, third, and fourth groups.

31. (Original) The node in claim 29, wherein horizontal coordinates represent latitude values and vertical coordinates represent longitude values.

32. (Original) The node in claim 29, wherein the node is any one of a base station, a base station controller, a radio network controller, or a core network node.